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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,604	06/26/2003	Cesar A. Gonzalez	VRT0055US	4147

60429	7590	12/07/2006		EXAMINER	

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EXAMINER
DOAN, DUC T

ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/606,604	GONZALEZ, CESAR A.
	Examiner	Art Unit	
	Duc T. Doan	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>23 October 2006</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-33</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-33</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>26 June 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   Paper No(s)/Mail Date. _____.
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)   5) ☐ Notice of Informal Patent Application
    Paper No(s)/Mail Date _____.   6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claims 1-33 have been presented for examination in this application. Claims 1-33 are pending in this application.

Claims 1-33 rejected.

Applicant's remarks filed 10/23/06 have been fully considered with the result as follows,

Specifications

In the previous office action, Examiner raised the following issue,

The amended claim 1 recites, "said primary storage unit is configured to provide access to data stored on non-removable storage media". The definition of primary storage unit and secondary unit is supported in the specification's paragraph 26, lines 3-5, that states "..**non-removable storage media such as hard drive..**" and "**removable storage media such as a physical tape library..**".

Therefore, the statements clearly and broadly define/equate a physical tape library (i.e a device) to a removable media (i.e media). Similarly, the above statements clearly and broadly define/equate a hard drive (i.e a device) to a non-removable media (i.e a media).

In the previous office action, based on the above expressly definition/equating of device to a media by Applicant, Examiner interpreted the claims as Applicant stated in above statements. (i.e Applicant equates the storage unit to the media). Therefore, in the last office action, Examiner respectfully disagreed with the above characterization of hard drive storage

devices as stated in the specification that is hard drive being equated to the non-removable

storage/media. It has been known in the art that, storage devices such as hard drives can be

bolted/resided internally or alternatively be resided externally and conveniently plugged into a

system as needed. The difference between external and internal hard drives is mainly the length

of the cable to plug these storage devices into the system. Both storage devices inherently have

associated codes and processing units to interpret commands (SCSI commands) to access data in

its media in the specific format of its media. For example, the well know SCSI storage access

commands having parameter fields to indicate particular media types (tapes, disk etc..). SCSI

specification further explains that each device (disk type, tape type), when receiving these

commands, must interpret these commands accordingly to access data on its media. In fact,

Trimmer's 37's paragraph 31 clearly discloses that both removable and non-removable disks are

known, and are used as primary storages.

In the response/remarks filed 10/23/06, pages 12-13, Applicant did not provide any

amendment for the above explicitly define statements (i.e the statements in specification

expressly defines and equates the storage unit to the media, see paragraph 26). If Applicant

intends not to equate the media to the storage unit, the above statements in paragraph 26 must be

amended.

Claims 10,16,22,28 have the same defects as of claim 1.

All dependent claim(s) are having the same deficiencies as the claims they depend from.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4,6 rejected under 35 U.S.C. 102 (e) as being anticipated by Trimmer'39 et al (2004/0153739); incorporated reference Trimmer'11 et al (2004/0034811).

As in claim 1, Trimmer'39 describes a system comprising: a virtual device interface, wherein said virtual device interface is configured to allow a primary storage unit to be accessed using at least one operation that is substantially the same as that used to control a second storage unit (Trimmer'39's paragraphs 14-15 discloses that by using identical commands (ie.using tape device accessing command), host computer #56 can access data in both disk "primary" storages Fig 5: #54 and physical tape "secondary" off site storage), said virtual device interface is coupled to control said primary storage unit and said secondary storage unit (see Trimmer'39's paragraph 15, the virtual tape library system capable of electronically copy data , for example, to local disk storage #54 and to remote off site physical tape library), said primary storage unit is configured to provide access to data stored on non-removable storage media (Trimmer'39's paragraph 31 discloses the "primary" storage devices #54 comprise of non-removable media using in devices such as disks, thus inherently these devices are configured to interpret access command and

provide data in their media to requester), and said secondary storage unit is configured to permit

access to data stored on the removable storage media (Trimmer'39's paragraphs 15,21 discloses

the off site storage device is a physical tape library with removable tape media that corresponds

to the claim's removable storage media. Furthermore, this "secondary storage unit" is inherently

capable of interpreting access command and only allowing to access data if the command is in

the right format (for example, to access a physical tape media, the access command must be in

the format of a physical tape).

As in claims 2-4,6, the claims recite wherein said virtual device interface is further

configured to allow a utility to access said primary storage unit as said secondary storage unit

(claim 2); wherein said virtual device interface is a virtual tape interface (claim 3); said primary

storage unit (claim 4); a secondary storage unit (claim 6). The claim rejected based on the same

rationale as of claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claims 5,7,8-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Trimmer et al

(US 2004/0153739); incorporated reference Trimmer'11 et al (2004/0034811), as applied to

claims 4, and in view of Trimmer et al (2004/0111251).

As in claim 5, Trimmer'39 does not expressly disclose the associated software modules

to interpret storage access command. However, Trimmer'51 discloses the software modules for

the Virtual Tape Library (VTL) as follows:

wherein said virtual tape interface is configured to create a virtual loader on said primary

storage unit (Trimmer'51's paragraph 11 discloses the VTL can create/emulate a physical tape

device driver (emulation module, corresponding to the claim's virtual loader) for each backend

media device. Trimmer'51 paragraphs 32,36 further discloses that the emulation module Fig 2:

#58 is capable of interpreting "front end" host accessing commands being issued as tape device

access commands; the emulation module #56 utilizes other modules #59. n to convert these

commands into particular commands using for the backend device modules. In other words, the

software emulation module can accept host "front end" commands in a first command format

(tape command format) and convert to a second command format (disk command format) for the

"backend" disk device media. Of course, if the backend devices are physical tape library device,

there is not need for this command conversion. It would have been obvious to one of ordinary

skill in the art at the time of invention to include the virtual tape library modules and methods as

suggested by Trimmer'51 in Trimmer'39 system thereby allowing the host to using one set of

command to access the backend device regardless the backend devices are physical tape or

physical disks (Trimmer's51 paragraphs 32,36).

As in claim 7, a virtual loader library, communicatively coupled to said primary storage unit; and a virtual loader utilities module, communicatively coupled to said virtual loader library (Trimmer'51 teaches the VTL communicates with emulation module, and comprising of: utility functions to obtaining information for a given virtual tape library such as current number of slots; Page 2, paragraph 20; Utility functions to operating tape devices such as moving robot arms; Page 3, paragraph 25).

As in claim 8, the claim recites a main module, communicatively coupled to said virtual loader library, and a configuration file, accessible by said main module, wherein said configuration file comprises information that allows said virtual loader library to create a virtual loader on said primary storage unit. The claim rejected based on the same rationale as of claim 7. Trimmer'51 further discloses a configuration file to keep specifications for the emulation module and to configure a virtual tape library accordingly to the specifications; paragraphs 15-17, Fig 1.

As in claim 9, the claim recites said virtual loader library is configured to allow a utility to access said primary storage unit as said secondary storage unit. Trimmer'51 page 3, paragraph 25 further discloses the VTL has code modules to carry out utility functions such as copying data to a backup library.

Claim 10-12,15-18,21-24,27-30,33 rejected under 35 U.S.C. 103(a) as being unpatentable over Trimmer et al (US 2004/0153739) in view of Trimmer et al (2004/0111251).

As in claim 10, the claim rejected based on the same rationale as of claims 1 and 5.

As in claim 11, the claim recites wherein said secondary storage unit is a tape backup

unit, and said primary storage unit is a hard drive. The claim rejected based on the same rationale

as of claim 10.

Claims 12,18,24,30 rejected based on the same rationale as of claim 5.

As in claim 15, the claim recites wherein said secondary storage unit is communicatively

coupled to said virtual tape interface. The claim rejected based on the same rationale as of claim

5.

Claims 16,22,28 rejected based on the same rationale as of claim 10.

Claims 17,23,29 rejected based on the same rationale as of claim 11.

Claims 21,27,33 rejected based on the same rationale as of claim 15.

Claims 13-14,19-20,25-26,31-32 rejected under 35 U.S.C. 103(a) as being unpatentable

over Trimmer et al (US 2004/0153739); incorporated reference Trimmer'11 et al

(2004/0034811), Trimmer et al (2004/0111251) as applied to claims 12,18,24,30 respectively,

and further in view of Anna et al (US Pub 2004/0078639).

As in claims 13-14, the claims rejected based on the same rationale as of claim 5.The

claims further recite wherein said creating creates a directory on said hard drive (claim 13);

storing information on a virtual tape in said virtual loader, wherein said storing stores

information in a file in said directory, and said file corresponds to said virtual tape (claim 14).

Trimmer'39 and Trimmer'51 does not describe the claim's detail of a directory. However, Anna

describes data of logical volumes in a virtual tape server are stored in files and in directories

structures (Anna's page 2, paragraph 20). It would have been obvious to one of ordinary skill in

the art at the time of invention to include Anna's file system manager as suggested by Anna in

Trimmer'39's system to organizing all the files in a volume in a directory and thereby providing

an efficient method of recovering lost or inaccessible data in a volume (Anna's page 4, paragraph

57; page, paragraph 66).

Claims 19-20,25-26,31-32 rejected based on the same rationale as of claims 13-14

correspondingly.

Response to Arguments

Applicant's arguments in response to the last office action has been fully considered but they

are not persuasive. Examiner respectfully traverses Applicant's arguments for the following

reasons:

Regarding remarks on pages 10-11 for the rejection of claims 1,10,16,22,28 under 112,

A) In the previous office action, Examiner raised the following issue,

The amended claim 1 recites, "said primary storage unit is configured to provide access

to data stored on non-removable storage media". The definition of primary storage unit and

secondary unit is supported in the specification's paragraph 26, lines 3-5, that states "..**non–**

removable storage media such as hard drive.." and "**removable storage media such as a**

physical tape library..".

Therefore, the statements clearly and broadly define/equate a physical tape library (i.e a

device) to a removable media (i.e media). Similarly, the above statements clearly and broadly

define/equate a hard drive (i.e a device) to a non-removable media (i.e a media).

In the previous office action, based on the above expressly definition/equating of device

to a media by Applicant, Examiner interpreted the claims as Applicant stated in above

statements. (i.e Applicant equates the storage unit to the media). Therefore, in the last office

action, Examiner respectfully disagreed with the above characterization of hard drive storage

devices as stated in the specification that is hard drive being equated to the non-removable

storage. It has been known in the art that storage devices such as hard drives can be

bolted/resided internally or alternatively be resided externally and conveniently plugged into a

system as needed. The difference of external and internal hard drive is mainly the length of the

cable to plug these storage devices into the system. Both storage devices inherently have

associated codes and processing units to interpret commands (SCSI commands) to access data in

its media in specific format of its media. For example the well know SCSI commands have

parameter fields to indicate particular media types (tapes, disk etc..) and SCSI specification

explains how each device (disk type, tape type) must interprets these commands accordingly to

access data on its media. In fact, Trimmer's 37's paragraph 31 clearly discloses that both

removable and non-removable disks are known, and are used as primary storages.

In the response/remarks filed 10/23/06, pages 12-13, Applicant does not provide any

amendment for the above explicitly define statements (i.e the statements in specification

expressly defines and equates the storage unit to the media, see paragraph 26). If Applicant

intends not to equate the media to the storage unit, the above statements in paragraph 26 must be

amended.

Claims 10,16,22,28 have the same defect as of claim 1.

All dependent claim(s) are having the same deficiencies as the claims they depend from.

Furthermore, Trimmer'39's paragraph 31 discloses the "primary" storage devices #54

comprise of non-removable media using in devices such as hard drives. Trimmer'39's

paragraphs 15,21 discloses the off site storage device is a physical tape library with removable

tape media that corresponds to the claim's removable storage media.

Regarding the remarks at pages 12-14 for the rejections of claims 1-4,6 under 35 U.S.C.

102(e),

B) Applicant contends that Trimmer '39 paragraph 15 does not disclose of a physical tape

drive at the remote offsite. Examiner directs Applicant's to Trimmer's disclosure incorporated by

reference (i.e Trimmer's11's paragraph 18) that discloses the offsite storage is a VTL or PTL

physical tape library, as desired.

Regarding the remarks at pages 14-16 for the rejections of claims 10-12,15-18,21-24,27-

30,33 under 35 U.S.C 103,

C) Applicant does not point out the specific errors in the office action regarding the

limitations in the independent claims, including somehow Trimmer references do not teach the

limitations corresponding to "converting" and "accessing". Examiner maintains that all the

limitations are rejected based on the same rationale as of claims 1 and 5.

Trimmer'51's paragraph 11 discloses the VTL can create/emulate a physical tape device

driver (emulation module, corresponding to the claim's virtual loader) for each backend media

device. Trimmer'51 paragraphs 32,36 further discloses that the emulation module Fig 2: #58 is

capable of interpreting "front end" host accessing commands being issued as tape device access

commands; the emulation module #56 utilizes other modules #59. n to **convert** these commands

into particular commands using for **accessing** the backend device modules. In other words, the

software emulation module can accept host "front end" commands in a first command format

(tape command format) and convert to a second command format (disk command format) for the "backend" disk device media.

D) Examiner respectfully disagrees with Applicant that Trimmer'51 paragraph 32 teaches away from actual running the PTL. Trimmer'51 paragraph 32 discloses that depending on the configuration of the system, for example, a system can have secondary storage as either a VTL or an actually physical tape library PTL (see item B); a system can have the primary storage system is a VTL of disk devices type. Thus when issuing the commands to these VTL's that are not actual physical tape devices, further enhancement/optimization can be achieved by the DPA for not issuing certain tape commands (i.e by DPA module) and by and VTL modules for not having to decode these commands. However, if the storage device is actual physical tape library, obviously the DPA module and emulation module will provide communication with full set of tape commands.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 36 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

When responding to the office action, Applicant is advised to provide the examiner with

the line numbers and page numbers in the application and/or references cited to assist examiner

to locate the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Duc T. Doan whose telephone number is 571-272-4171. The

examiner can normally be reached on M-F 8:00 AM 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hyung S. Sough can be reached on 571-272-6799. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

HYUNG SOUGH
SUPERVISORY PATENT EXAMINER

12/05/06